1646

WRITTEN REPORT ON THE POSSIBLE RELEASE FROM THE FMPC PLANT 1 PAD

03-14-1990

DOE-FSO/EMERGENCY PLANNING
DOE-787-90
1
LETTER

Department of Energy
FMPC Site Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6319

1646

March 14, 1990
DOE-787-90

Mr. Liore Maccarone, Co-Chairman
Local Emergency Planning Committee
For Hamilton County
84 Shadybrook Drive
Cincinnati, Ohio 45216

Dear Mr. Maccarone:

WRITTEN REPORT ON THE POSSIBLE RELEASE FROM THE FMPC PLANT 1 PAD

A notification was made to Mr. Gary Miller of the Local Emergency Planning Committee on February 23, 1990, of a possible release of CERCLA regulated materials from the Feed Materials Production Center (FMPC). Pursuant to Ohio Revised Code (ORC) 3750.06(D) and the Code of Federal Regulations (40 CFR 355.40(b)), a written report is also required. The enclosed report has been prepared to meet these requirements.

If there are any questions on this report, please feel free to call me at (513) 738-6655.

Sincerely,

Raymond J. Hansen
Acting FMPC Site Manager

DP-84:Avel

Enclosure: As stated

1

[redacted] 1646

Department of Energy
FMPC Site Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6319

[redacted]

March 14, 1990
DOE-787-90

Mrs. Irene Lewis, Director
Civil Defense for Butler County
141 Court Street
Hamilton, Ohio 45011

Dear Mrs. Lewis:

WRITTEN REPORT ON THE POSSIBLE RELEASE FROM THE FMPC PLANT 1 PAD

A notification was made to your agency on February 23, 1990, of a possible release of CERCLA regulated materials from the Feed Materials Production Center (FMPC). Pursuant to Ohio Revised Code (ORC) 3750.06(D) and the Code of Federal Regulations (40 CFR 355.40(b)), a written report is also required. The enclosed report has been prepared to meet these requirements.

If there are any questions on this report, please feel free to call me at (513) 738-6655.

Sincerely,

Ray Hansen

Raymond J. Hansen
Acting FMPC Site Manager

DP-84:Avel

Enclosure: As stated

[redacted]

[redacted] 1646

Department of Energy
FMPC Site Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6319

[redacted]

March 14, 1990
DOE-787-90

State Emergency Response Commission
c/o Mr. Tim Hickin
1800 WaterMark Drive
P. O. Box 1049
Columbus, Ohio 43266-1049

Dear Mr. Hickin:

WRITTEN REPORT ON THE POSSIBLE RELEASE FROM THE FMPC PLANT 1 PAD

A notification was made to Ohio Emergency Response in February, 1990, of a possible release of CERCLA regulated materials from the Feed Materials Production Center (FMPC). Pursuant to Ohio Revised Code (ORC) 3750.06(D) and the Code of Federal Regulations (40 CFR 355.40(b)), a written report is also required. The enclosed report has been prepared to meet these requirements.

If there are any questions on this report, please feel free to call me at (513) 738-6655.

Sincerely,

Raymond J. Hansen
Acting FMPC Site Manager

DP-84:Avel

Enclosure: As stated

[redacted]

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[redacted]

Department of Energy
FMPC Site Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6319

March 14, 1990
DOE-786-90

Dr. Richard L. Shank, Director
Ohio Environmental Protection Agency
1800 WaterMark Drive
P. O. Box 1049
Columbus, Ohio 43266-1049

Dear Dr. Shank:

WRITTEN REPORT ON THE POSSIBLE RELEASE FROM THE FMPC PLANT 1 PAD

Ohio EPA has been informed of the possible release of CERCLA regulated materials from the Feed Materials Production Center (FMPC) in February, 1990. Pursuant to Ohio Revised Code (ORC) 3750.06(D) and the Code of Federal Regulations (40 CFR 355.40(b)), a written report is also required. The enclosed report has been prepared to meet these requirements and provide updated information on the event.

If there are any questions on this report, please feel free to call me at (513) 738-6655.

Sincerely,

Ray Hansen

Raymond J. Hansen
Acting FMPC Site Manager

DP-84:Avel

Enclosure: As stated

cc w/encl.:

G. E. Mitchell, OEPA-Dayton

[redacted]

40 CFR 355.40(b) AND ORC 3750.06(D) RELEASE REPORT

[redacted]

FEED MATERIALS PRODUCTION CENTER

FERNALD, OHIO

A. BACKGROUND INFORMATION

Several low-level radioactive waste streams were added to the list of materials reported as mixed RCRA/low-level radioactive waste in the latest revision of the FMPC Part B RCRA Permit Application submitted to OEPA in September, 1989. These wastes were added as a result of analytical data from sampling or resampling the materials. Previous testing had indicated that the wastes were not RCRA hazardous and they were stored on the Plant 1 pad as non-RCRA low-level radioactive wastes. Although the prior data had shown the wastes to be non-RCRA, a conservative approach was adopted and the materials were identified in the Part B RCRA Permit Application as hazardous waste.

As a result of reviewing waste inventories for preparation of the Hazardous Waste Facility Annual Report, the FMPC discovered that a number of the drummed wastes newly added to the Part B RCRA Permit Application had not been moved into RCRA storage warehouses. Efforts to properly label, overpack as necessary, reweigh, and transport the drums to approved RCRA storage was immediately initiated. This effort was started on February 2, 1990.

During the process to overpack and weigh the drums, weight discrepancies (both gains and losses) were noted from the original weights recorded for the drums when they had been placed into storage. Because some of the drums were in a deteriorated condition it was recognized that a potential release of hazardous substances could have occurred. On February 13, 1990, the National Response Center was notified of a possible release of CERCLA regulated materials from the FMPC. The Ohio Emergency Response hotline was also given verbal notification. Since information indicated that some of the materials had been in storage for a number of years, and no evidence was found of materials released on the pad, it could not be determined if an RQ release had occurred or whether one had occurred within one twenty-four hour period. U.S. EPA Region 5 officials were subsequently given a verbal report on the event.

Efforts to overpack, reweigh, and move the drums to inside RCRA storage were completed on February 21, 1990. A total of 742 containers were overpacked. Of this, 603 cumulative drums were identified as having weight discrepancies. Verbal reports were also made to the National Response Center, the Ohio Emergency Response hotline, the Hamilton and Butler County Emergency Planning Commissions, and the local Crosby Township Fire Department on the event.

[redacted]

B. REQUIRED INFORMATION

Pursuant to 40 CFR 355.40(b) and ORC 3750.06(D), a written report on the release is required to be submitted within 30 days of the event. The following information is provided for submittal to meet these requirements.

Updated Information

1. Location of the release

The potential release was from drums stored on the Plant 1 pad located in the northwest area of the FMPC site (Attachment 1). The drums that showed weight discrepancies were stored in various locations on the approximately 375,000 sq. ft. storage pad. Attachment 2 shows approximate locations for those drums involved.

2. Chemical name and identity of any substance involved in the release and whether the substance is an extremely hazardous substance

A description of the materials involved is provided in Attachment 3. These represent process residues generated at the FMPC and from other sources. RCRA hazardous waste constituents identified in each stream are also listed in the attachment. Each stream listed also contained uranium. The uranium concentration of the materials averaged 15.49% by weight with an isotopic average of .757% U-235. No extremely hazardous substances have been identified in these materials.

3. Estimate of the quantity of any hazardous substance released into the environment

A total of 222 drums were identified with a cumulative weight loss of 5,168 pounds. In addition, another 381 drums were found to have a cumulative weight gain of 15,062 pounds. Of the drums that lost weight, the largest loss (4,053 pounds) involved 157 drums of a wet sump cake waste stream expected to contain an estimated 30-60% solids (largely sodium uranate) and 40-70% water. From the high percentages of water contained in the sump cake and the fact that no observable spilled solids were seen when moving and overpacking the drums on the pad, the majority of the weight discrepancy could be explained as water ingress into the drums and water evaporation/loss by leaking from deteriorated drums.

The quantities of RCRA hazardous waste that could have been released through leaked water are not expected to be significant based upon Toxicity Characteristic Leaching Procedure (TCLP) data and Volatile Organic Analysis (VOC) data presented in Attachment 3. The maximum uranium loss that could have occurred is estimated at 801 pounds based on a uniform loss of drum contents. However, the actual quantity of any uranium loss is anticipated to be much smaller since most of the weight loss is thought to have been water, the uranium in the materials is insoluble to a high degree, and no observable solids were found on the pad.

4. Time and duration of the release
These drums have been stored on the Plant 1 pad for a period of years. While one lot has been stored at the FMPC since 1979, most materials have been stored since 1983 or later. Therefore, the exact time and duration of any release cannot be determined. It cannot be determined if an RQ release had occurred in any twenty-four hour period in the past.

5. Environmental media into which the substance was released
The Plant 1 pad is an uncontrolled pad which currently drains to the FMPC storm sewer system. The storm sewer drains discharge to the Storm Water Retention Basin which is pumped after a delay to Manhole 175 and then to the Great Miami River. Prior to 1989 the storm sewer discharged directly to Manhole 175. The possibility therefore exists that some released materials may have gone through the FMPC storm sewer system to the Great Miami River. The storm sewer flows going to the Great Miami River are monitored for uranium on a daily basis. Routine monitoring is not performed for RCRA hazardous waste constituents in the Great Miami River discharges.

In addition to possible storm sewer discharges, any released materials could have run off the Plant 1 pad into an adjacent field to the west of the pad. Sampling of this area has indicated some uranium contamination in the soil. Analysis of soil samples for EP-Toxicity metal have indicated no hazardous constituents above the limits. The Plant 1 pad itself was given a complete radiological survey following the event. The only areas with high radiological results are shown in Attachment 4.

6. Known or anticipated acute or chronic health risks associated with the release
There are no known or anticipated health risks as a result of the potential release. The most probable affected individuals were Plant 1 pad workers who are regularly monitored through a Bioassay program for internal contamination. No unusual intakes have been noted.

7. Proper precautions to take as a result of the release
No special precautions or emergency response actions were taken for as a result of the discovery of this potential release. All FMPC workers involved in the actual drum movement and overpacking operation were properly trained prior to the start of this operation.

8. Name and telephone number of the person or persons to be contacted for further information
Mr. Ray Hansen DOE-FMPC (513) 738-6655

Information under 40 CFR 355.40(b) and ORC 3750.06(D)(1)-(5)

1. Actions taken to respond to and contain the release
Drums which showed weight discrepancies were overpacked by February 21, 1990, and were placed into approved RCRA storage with secondary containment. Because no real time release of material was noted to occur and radiological surveys of the Plant 1 pad showed no unusual contamination levels, no additional actions were taken to respond and contain the potential release. A RCRA closure plan has been submitted to OEPA for the Plant 1 pad.

2. Known or anticipated acute or chronic health risks associated with the release
There are no known or anticipated health risks as a result of the potential release.

3. Advice regarding medical attention necessary for individuals exposed to the substance released
No medical advice is warranted as a result of the potential release.

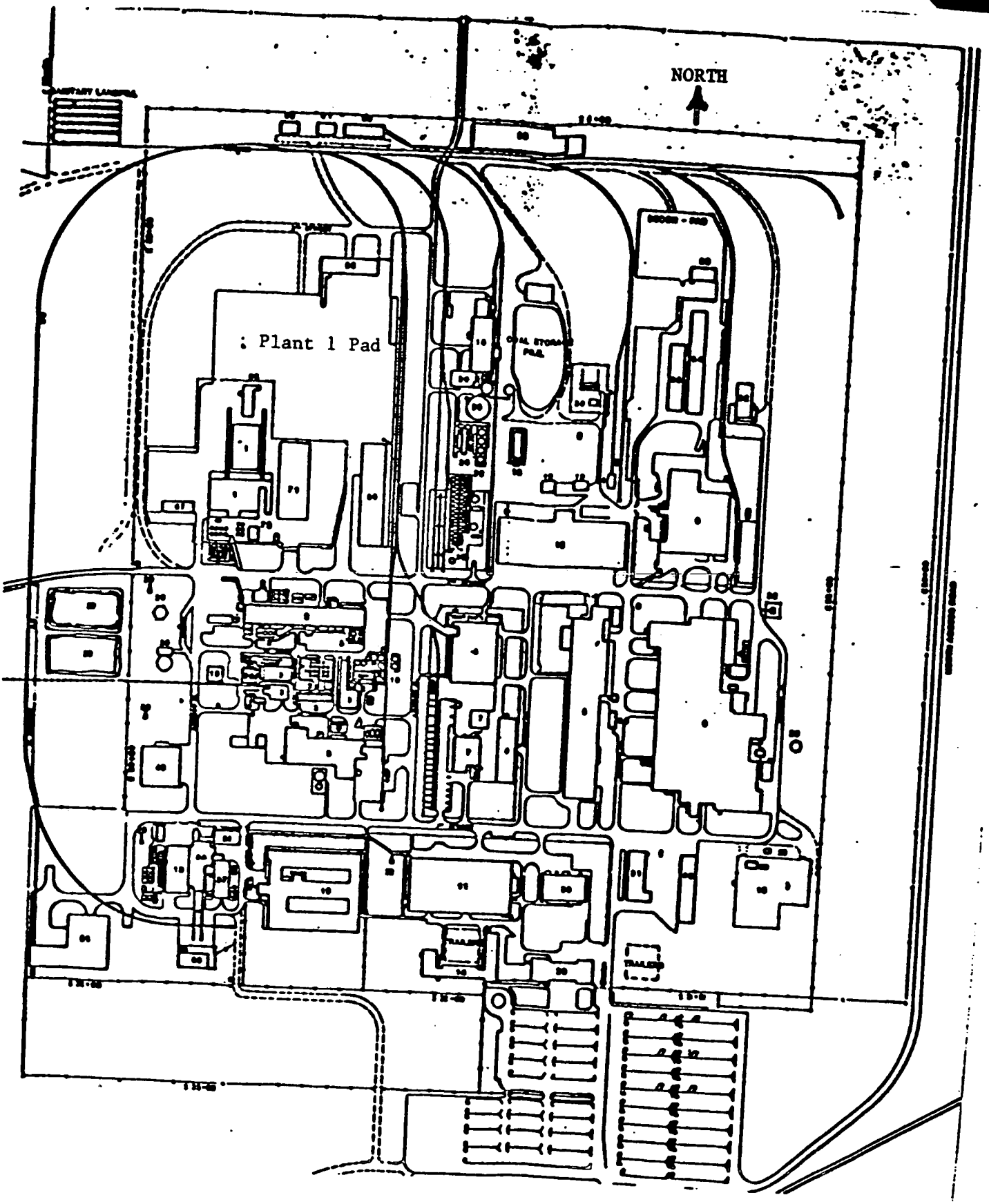
4. Summary of all actions taken by the owner or operator to prevent a recurrence of the release
The drums that showed the weight discrepancies were overpacked into larger drums, placed into approved indoor RCRA storage having secondary containment, and are being inspected weekly.

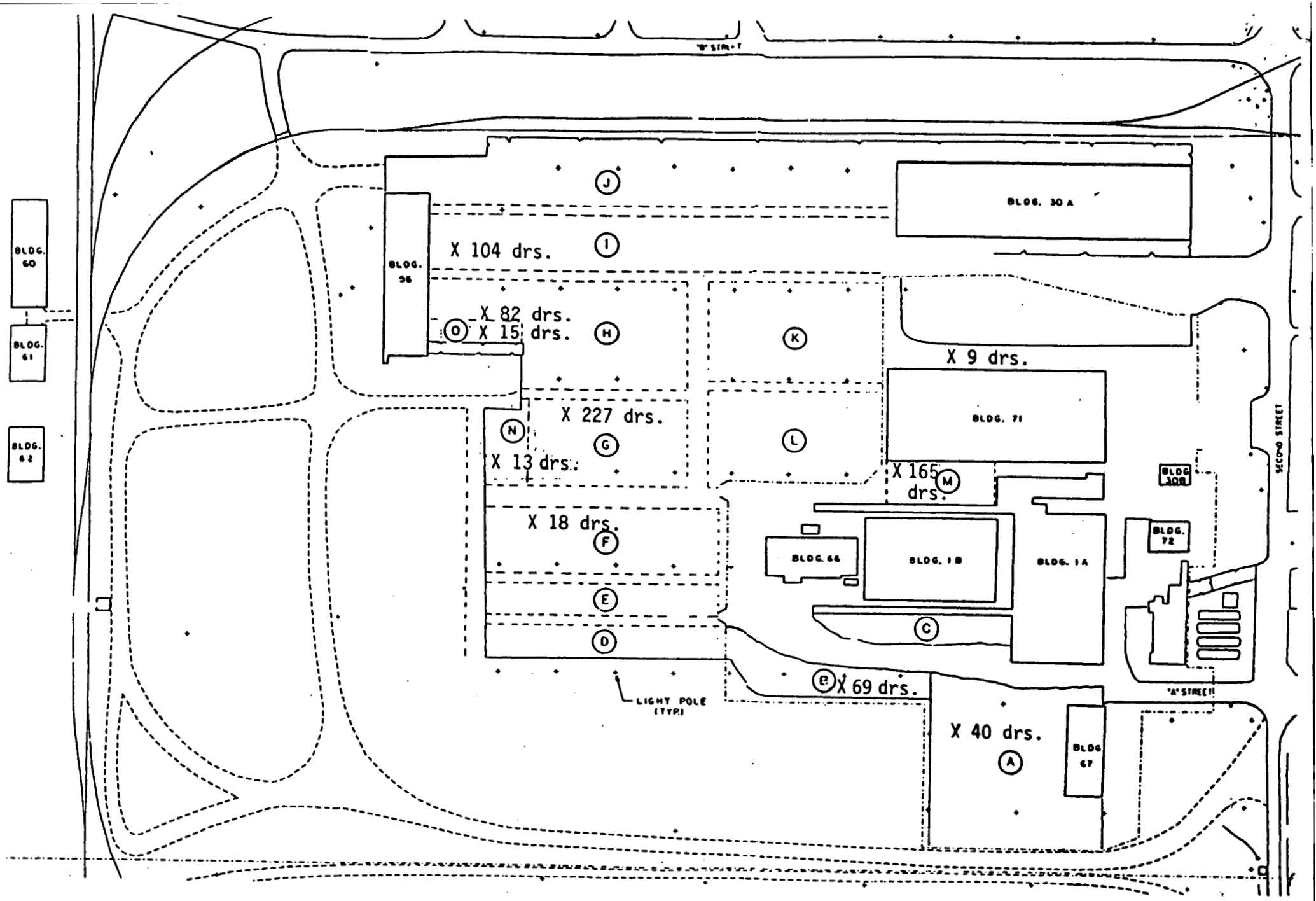
A five part approach is underway at the FMPC to prevent additional releases from the remaining low level radioactive waste drums stored on the Plant 1 pad. First, a weekly inspection of all the drums on the Plant 1 pad has been initiated to identify any badly deteriorated drums that present an immediate risk of leakage. Second, a project was initiated following the overpacking of the above drums to overpack more than 10,000 of the approximately 45,000 additional drums from the Plant 1 pad. Third, an effort has been initiated to move a portion of the drums out of the weather from outdoor storage into existing FMPC process buildings. Fourth, contamination barriers constructed of impermeable herculite and PVC piping are being erected to contain potential releases from drums on the Plant 1 pad. Lastly, planning is in progress to process the non-hazardous low level radioactive wastes to allow subsequent off-site disposal. Pending funding approvals, this processing work would be completed by the end of FY-1993.

[redacted]

ATTACHMENT 1

FMPC SITE





PLANT 1 PAD

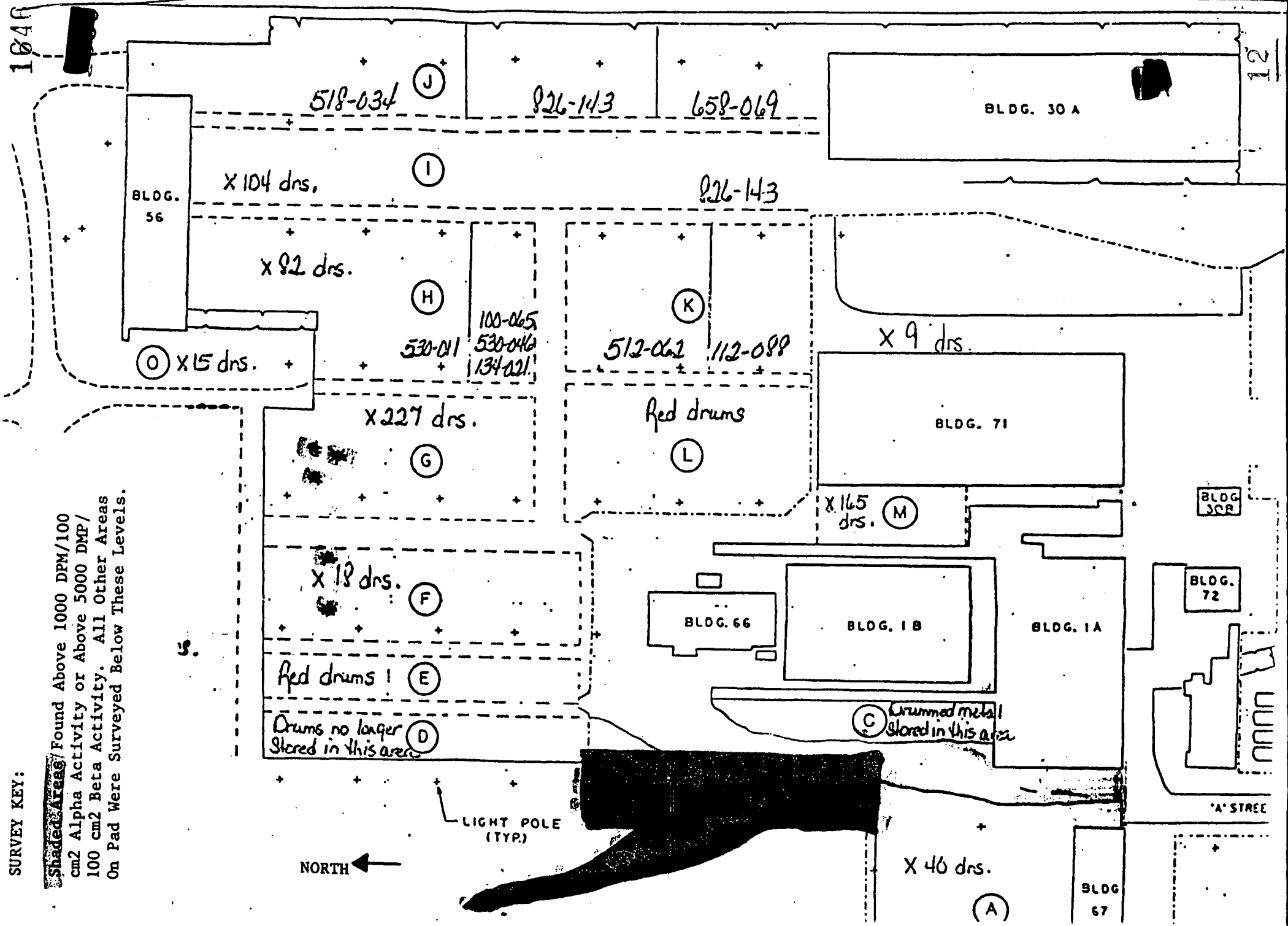
ATTACHMENT 2

ATTATCHMENT 3

SUMMARY OF DRUMS WITH LOSES

SOURCE/MATERIAL CODE	MATERIAL DESCRIPTION	WEIGHT LOSS (Pounds)	NO. OF DRUMS	WASTE CODE & CONSTITUENT	RCRA ANALYSIS	CERCLA RQ (Pounds)
FTA-069	WET SUMP CAKE FROM RMI	4053	157	D004 ARSENIC D006 CADMIUM D008 LEAD	13.1 mg/l TCLP 1.39 mg/l TCLP 19.0 mg/l TCLP	1 10 1
805-042	NON-OILY PLANT 8 CLEAN-OUT SLUDGES	127	4	F002 METHYLENE CHLORIDE	.035 mg/l VOC*	1000
132-021	WET MgF2-DRUM DECONTAM. RESIDUE	6	1	D006 CADMIUM	32.4 mg/l TCLP	1
FYC-018	CONTAIN. ALUMINUM SODA ASH-PADUCAH	30	8	D005 BARIUM	147 mg/l TCLP	1000
310-062	HIGH FLUORIDE DUST COLLECTOR RESIDUE-PILOT PLANT	112	5	D008 LEAD	8.07 mg/l TCLP	1
916-061	NON-CHLORIDE FURNACE SALTS-PLANT 9	389	23	D004 ARSENIC D006 CADMIUM D008 LEAD	9.52 mg/l TCLP 1.03 mg/l TCLP 21.8 mg/l TCLP	1 1 1
917-061	NON-CHLORIDE FURNACE SALT-PLANT 9	64	17	D004 ARSENIC D008 LEAD	8.13 mg/l TCLP 13 mg/l TCLP	1 1
FYA-033	INCINERATOR CINDERS FROM PADUCAH	387	7	D008 LEAD	5.22 mg/l TCLP	1
		5168	222			

* - Solvent-containing sludge with less than 1% total F001-F005 solvent constituents is not banned from land disposal (40 CFR 268.30 (a)(3))



SURVEY KEY:

Shaded Areas: Found Above 1000 DPM/100 cm2 Alpha Activity or Above 5000 DMP/100 cm2 Beta Activity. All Other Areas On Pad Were Surveyed Below These Levels.